

Remarks:

Reconsideration of the application is requested. Claims 27-33 and 39-44 are now in the application. Claims 27, 29, 31-33 have been amended. Claims 24-26 have been canceled. Claims 39-44 have been added.

Support for new claim 39 can be found in Fig. 1.

Support for new claims 40-43 can be found in paragraph [0052] and Figs. 2-3.

Support for claim 44 can be found in paragraph [0054].

On January 14, 2009, the undersigned attorney, the inventor, and the inventor's European patent counsel held a conference call to discuss the Office action and a proposed claim.

A proposed new claim was discussed in light of the prior-art article by Payne.

New claim 39 is similar to the claim proposed in the conference call. Before discussing the prior art in detail, a brief review of the invention as claimed is provided. Claim 39 calls for a method for identifying suspicious regions in an organ of a body that includes the following steps:

scanning a preselected region of body tissue that contains an organ of interest to obtain a volumetric database including voxels of the preselected region;

saving the volumetric database in memory as a saved volumetric database;

subjecting the saved volumetric database to a segmentation technique to identify and distinguish an outer surface of the organ from surrounding tissue;

using the outer surface of the organ as a reference surface;

selecting a distance from said outer reference surface of the organ;

extracting from said saved database voxels that are within the organ and that are located at the selected distance from the identified outer reference surface;

mapping the extracted voxels onto a two-dimensional grid; and

displaying said two-dimensional grid onto a two-dimensional display to reveal any suspicious region in the organ at the selected predetermined distance from the reference surface. (Emphasis added by Applicant.)

Payne discloses a method in which voxels that are given distance from a reference surface are projected on a three-dimensional surface. See Fig. 2. The three-dimensional rendering is then shown a two-dimensional screen.

In contrast, the invention according to claim 39 displays the voxels that are given distance from a reference surface on a two-dimensional surface. The analogy that was discussed in the interview was one of an onion. An onion has layers at given depths in the onion. To further the analogy, a given layer of the onion is then flattened for viewing as a two-dimensional display.

Displaying the surface on a two-dimensional surface has unexpected benefits compared to the three-dimensional surface mapping taught by Payne. As discussed in paragraph [0054] of the specification of the instant application, displaying the layer on two-dimensions presents the surface in a manner that is more similar to the view that the practitioner might see if examining the tissue directly (as opposed to an image). In turn, this leads to more accurate diagnoses.

Another improvement of the invention compared to Payne, is that the image being presented is made of actual voxels. The voxels are not mapped onto other surfaces or interpolated. *Compare* Payne, p. 68, under the heading “Surface Manipulation”.

Claims 40-44 are patentable over the prior art because they teach a method of reformatting the voxels that leads to rapid display of layers at different depths. The voxels are shifted to put the reference surface into a plane. By shifting the voxels, no calculation needs to be made after a selected distance is changed. In this manner, a practitioner viewing the images can quickly move through layers without processing delays for redrawing layers. Again, this aids the practitioner to observe and diagnose the abnormality. The prior art does not teach or suggest such a shift for preprocessing. Payne does not teach moving the voxels to a common plane; Payne involves three-dimensional surface mapping.

Accordingly, new claims 40-44 are patentable for the above-mentioned additional reasons.

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In view of the foregoing, reconsideration and allowance of claims 27-33 and 39-44 are solicited.  
In the event the Examiner should still find any of the claims to be unpatentable, please telephone  
counsel so that patentable language can be substituted.

If an extension of time for this paper is required, petition for extension is herewith made.

No fee is believed due. However, please charge any required fee (or credit any overpayments of fees) to the Deposit Account of the undersigned, Account No. 50-0601 (Docket No. 7390-X04-030).

Respectfully submitted,

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